

turned upwards, and surrounded by a circle of nine scales; eleven upper labials, third deepest and extending to the loreal groove; two large shields between the three following labials and the loreal groove, the second of which enters the eye; fourteen lower labials. A mental groove. Scales smooth, in 39 longitudinal series. Ventrals about 180; subcaudals 20. Anal spurs well developed. Tail once and a half the length of the head, pointed, ending in a curved, claw-like, horny scute similar to the anal spurs. Greyish brown above, with whitish spots and numerous, rather irregular, dark brown cross bands; head dotted with dark brown; lower parts white.

Total length 40 centim.

A single specimen.

MISCELLANEOUS.

The Nest and Eggs of the Alligator (Alligator lucius, Cuv.).
By Prof. SAMUEL F. CLARKE, Williams College, Mass. U. S.

It is somewhat remarkable that so promising a field of inquiry as that of reptilian embryology should have been so generally neglected; and it is certainly remarkable that almost nothing is known of the development of the Crocodilia or Loricata, the largest and most highly organized of the reptiles. The eggs and young alligators are such common objects in the shop windows in many of the Southern States that it appeared to be a simple matter to secure the eggs at the right time and in abundance. It proved, on the contrary, to be very difficult. I was assured by various hunters in Florida that each month from January to September inclusive was the only month in which the alligators lay their eggs, and this resulted in my having to make two journeys of over 2600 miles each.

At the time of my first visit, the first week in April, no eggs had been laid, and the ovaries of adult female alligators were full of eggs of all sizes up to 26 millim. in diameter. I returned to Florida on June 4, and found that I was still somewhat early, as the nests were then being built. With the aid of five experienced hunters I at last succeeded in finding, on the 9th of June, a nest evidently just completed in which there were twenty-nine eggs. The next day, at a point 40 miles further north, a second nest was found with thirty-one eggs.

There were many nests found, old and new, but only these two contained eggs.

The nests vary much in size, the largest being about $2\frac{1}{2}$ metres in diameter at the base and 80 centim. high in the central part, the whole having the shape of a rounded cone; they are located generally on a slightly elevated place, which is higher by a metre, or slightly more, than the surrounding level, and covered with a thick

growth of palmettos, mangroves, magnolias, &c. These are called "hummocks" by the natives. On one side of the hummock at least, in some cases on all sides, is a pond from $\frac{1}{3}$ to 2 metres in depth, and in the bank, under the water, the female alligator digs a cave which in some cases extends 3 metres under the hummock and which is always close to her nest. The nest is made by scratching together a great pile of dead leaves and twigs and humus which forms the surface of the ground, and which is arranged with some care; the inside is made of the more finely divided, almost powdery material of the deeper layers of the top soil, while the outside even to the top is covered with twigs and leaves which are whole or but little broken, and with many of the long unbroken leaves or needles of the southern pine. The eggs are deposited about 20 centim. from the top, and in the nests found were lying on top of one another, making rows or layers with the fine humus filling all interstices. The top of the nest is always well exposed to the sun.

The eggs are white, elliptical, and vary in the shorter diameter from 39 to 45 millim.; in length they vary from 67 to 88 millim. The shell is thicker than that of a hen's egg and more brittle; the shell-membrane is also thicker than that of a hen's egg and consists of an inner and an outer layer; the fibres of both extend obliquely around the egg and those of the two layers are always at right angles to each other; the shell-membrane is most closely attached to the shell in a zone around the smaller diameter, which varies greatly in width, and wherein the membrane is less translucent than towards either end, being much more opaque white. The white of the egg has the consistency of a very thick jelly, so that it will adhere to the yelk after the shell-membrane has been removed to such a degree that the whole egg can be held on the palm of the hand and transferred from one hand to the other. The yelk is spherical, large, and of the faintest yellow or straw-colour; it is so large that it nearly touches the shell-membrane in the middle line of its opaque zone, leaving but an extremely thin layer of white between yelk and membrane, and which white adheres very closely to the membrane throughout the opaque zone; this layer of white grows thinner as incubation proceeds and a very light watery liquid increases.

After the first day it is almost impossible to get off the membrane without rupturing the thin pellicle of white; and if this be done, the embryo is carried away with the outflowing liquid and is quickly broken into innumerable pieces.

They are for these reasons the most difficult eggs that I have ever tried to work with.

Very often the opaque zone is larger at one point, and that always marks the position of the embryo; when the zone is of equal breadth throughout it is impossible to determine its exact position.

Examining an egg on the day after they were found, and finding that no change had occurred, I concluded to pack them all carefully and get back with them as quickly as possible to my laboratory, where I could have the best facilities for the difficult work in hand.

This took six days of day and night travel, owing to unfortunate conditions, and I found upon my arrival that incubation had been going on for some time, and the neural folds had nearly completed their coalescence.

While it is possible to get several chapters of value in the life-history from the material secured, it will be necessary to make another trip and a more prolonged stay next summer to get the more important early stages.

Biological Laboratory, Williams College,
July 12, 1888.

—*Zoologischer Anzeiger*, No. 290, October 8, 1888, p. 568.

On a new Cyamus parasitic on the Cachalot.

By M. G. POUCHET.

Hitherto we have very little knowledge of the parasites of the Cachalot. The animal which grounded in 1874 near Ancona bore *Penelle*. Bennett and Scammon speak of *lice*, but up to last year M. Lütken had been unable to procure any. The author, who accompanied Prince Albert of Monaco in the 'Hirondelle,' was enabled, by the kindness of Mr. S. W. Dabney, to examine a Cachalot while it was being cut up at Lagens (Isle of Pico). He found three kinds of parasites:—1. In the first stomach a great number of Nematoid worms mixed with the beaks and crystalline lenses of Cephalopods; 2. A Cestoid worm encysted in the fat and also very abundant; 3. On the surface of the body a new *Cyamus*, for which he proposes the name of *C. physeteris*.

The resemblance presented by this *Cyamus* to other species of the same genus, especially that which lives on *Megaptera boops*, has no doubt led to the whalers having omitted to collect the *louse* of the Cachalot, which has thus remained undescribed. It is, however, at once distinguished by its numerous short branchiæ arranged in tufts on each side of the second and third (free) segments; their length does not exceed the antero-posterior diameter of the segments. By its head, which is intimately united with the first segment, and by its slender first pair of legs, which are turned inwards, it resembles *C. mysticeti* and *C. ovalis*. On the other hand the last joint of the large hook-shaped limbs is at first continuous with the axis of the limbs, and then curves into a complete semicircle, and it thus approaches *Platyeyamus Thompsoni*.

The male and female are of the same size. In the latter the ventral laminae appear to be caducous. As the young which they shelter are developed they separate and spread outwards, so that the body of the animal at the level of the first three (free) segments acquires the form of a spherical hood, within which the young of very different sizes are in contact with the epidermis of the host upon which they already feed.—*Comptes Rendus*, October 29, 1888, p. 698.